UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/418,562	10/15/1999	JACOBUS C. HAARTSEN	0119-022	9055

42015	7590	12/12/2006

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EXAMINER
ODOM, CURTIS B

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/418,562	HAARTSEN, JACOBUS C.
	Examiner	Art Unit	
	Curtis B. Odom	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10,12-23,25 and 27-46* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,16-23,31,33 and 35-46* is/are rejected.

7)☒ Claim(s) *10, 12-15, 25, 27-30, 32, and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-8, 10, 12-23, 25, and 27-46 have been

considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-8, 16-23, 31, 33, and 35-46 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bergstrom et al. (previously cited in Office Action 11/10/03) in view of Dent

(U. S. Patent No. 4, 476, 566)

Regarding claim 1, Bergstrom et al. discloses a method of selecting a hop channel for use

in a channel hopping communication system that communicates over a physical channel includes

a sequence of hop channels, comprising a set of forbidden hop channels and a remaining set of

allowable hop channels (column 2, lines 62-65), wherein the channels with interference are

forbidden hop channels, the method comprising:

selecting (column 2, lines 4-16) a hop channel from the sequence as a during a present phase of transmission; and

if the selected hop channel belongs to a set of forbidden hop channel then using a parameter to select, at the present phase, a substitute hop channel from the set of allowable channels (column 3, lines 13-65 and column 5, line 49-column 6, line 28, wherein the parameter (random number) is independent of conditions on the physical channel and a determination as to the selection of a hop channel as the substitute hop channel from the set of allowable hop channels is made each time the selected hop channel belongs to the set of forbidden hop channels, wherein each time fx is a forbidden hop channel, a second (new) frequency is generated from the allowable hop channels (column 3, lines 13-65) for the forbidden hop channel to be mapped, and depending on a status value, the selected hop channel or the substitute hop channel is used for transmission (column 2, lines 21-27).

Bergstorm et al. does not disclose specifically disclose using a time-varying parameter to select, at the present phase, a substitute hop channel, or mapping of a forbidden hop channel onto each allowable hop channel with equal probability.

However, Dent discloses a memory containing a set of available and unavailable hop channels (see column 3, lines 4-7). A pseudo-random number generator is used to select available hop channels from memory by means of a counter (see column 4, lines 43-67). The counter counts clock pulses (time-varying parameter) in order to enable the selection of the hop channels using multi-digit signals (see column 3, lines 30-35). Thus, since each available hop channel is selected randomly from memory (as disclosed in column 4, lines 4-23) using a pseudo-random number generator, each available hop channel is selected with equal probability.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to select allowable and substitute hop channels in Bergstrom using a clock signal and pseudo-random number generator for selection of hop channels with equal probability as disclosed by Dent since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 2, Dent discloses the time-varying parameter is a clock value (see column 3, lines 30-35). It would have been obvious to include this feature since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 3, Dent discloses and clock value and the present phase provided by a present number of clock pulses (see column 3, lines 30-35) is derived from the same clock value (see Fig. 1, block 2). It would have been obvious to include this feature since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claims 4 and 5, Dent discloses another time-varying parameter used to select the hop channels is a pseudo-random parameter (see column 4, lines 4-23). It would have been obvious to include this feature since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 6, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden channels is associated with received interference from a jammer (column 2, lines 11-27).

Regarding claim 7, which inherits the limitations of claim 1, Bergstrom et al. discloses at least one of the forbidden hop channels is reserved for used by a communication system that is not the channel hopping communication system (column 1, lines 13-21, wherein the prohibited frequency is occupied by a jammer caused by a local TV station).

Regarding claim 8, which inherits the limitations of claim 1, Bergstrom et al. discloses dynamically determining the set of forbidden hop channels, whereby the set of the forbidden hop channels varies over time (column 2, lines 62-65 and column 3, lines 16-26).

Regarding claim 16, claim includes limitations corresponding to the above rejection of claim 1, which is applicable hereto.

Regarding claim 17, claim includes limitations corresponding to the above rejection of claim 2, which is applicable hereto.

Regarding claim 18, claim includes limitations corresponding to the above rejection of claim 3, which is applicable hereto.

Regarding claim 19, claim includes limitations corresponding to the above rejection of claim 4, which is applicable hereto.

Regarding claim 20, claim includes limitations corresponding to the above rejection of claim 5, which is applicable hereto.

Regarding claim 21, claim includes limitations corresponding to the above rejection of claim 6, which is applicable hereto.

Regarding claim 22, claim includes limitations corresponding to the above rejection of claim 7, which is applicable hereto.

Regarding claim 23, claim includes limitations corresponding to the above rejection of claim 8, which is applicable hereto.

Regarding claim 31, which inherits the limitations of claim 1, Dent further discloses forming a counter value representing an index value based to the pseudo-random number generator (see column 4, lines 4-11); using the counter value to select an allowable hop channel 57 (see column 4, lines 4-20); and using the selected hop channel for communication (see column 4, lines 20-23). It would have been obvious to include this feature to select substitute hop channels since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 33, claim includes limitations corresponding to the above rejection of claim 31, which is applicable hereto.

Regarding claim 35, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly from the matrix.

Regarding claim 36, Dent discloses the time varying parameter is based on a system clock (see Fig. 1, block 2, column 2, lines 57-62). It would have been obvious to include this feature to select substitute hop channels since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 37, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel need not be the same as the previously selected substitute channel for

the forbidden hop channel (column 3, lines 16-35), wherein the substitute channel is generated randomly from the matrix

Regarding claim 38, Dent discloses the time varying parameter is based on a system clock (see Fig. 1, block 2, column 2, lines 57-62). It would have been obvious to include this feature to select substitute hop channels since Dent states frequency hopping provides some immunity to jamming and confidentiality to transmissions (see column 1, lines 18-26).

Regarding claim 39, which inherits the limitations of claim 16, Bergstrom et al. discloses the substitute hop channel is selected on a dynamic basis (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 40, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 41, which inherits the limitations of claim 16, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 42, which inherits the limitations of claim 40, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 43, which inherits the limitations of claim 1, Bergstrom et al. discloses the substitute hop channel is selected in a dynamic manner (column 3, lines 16-35 and column 5, line 49-column 6, line 28).

Regarding claim 44, which inherits the limitations of claim 11, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the hop channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 45, which inherits the limitations of claim 1, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Regarding claim 46, which inherits the limitations of claim 44, Bergstrom et al. discloses each of the allowable hop channels is available for selection as the substitute channel (column 2, line 54-column 3, line 35, permitting frequencies).

Allowable Subject Matter

4.   Claims 10, 12-15, 25, 27-30, 32, and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
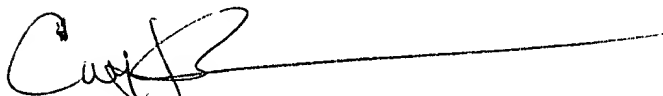
Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.
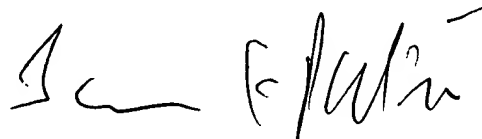
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
December 12, 2006

JAY K. PATEL
SUPERVISORY PATENT EXAMINER